## Scheme 1

**1a**. 
$$R = H$$
,  $X = H$  to **1b**.  $R = SO_3H$ ,  $X = H$ 

**2a**. 
$$R = NO_2$$
,  $X = H$  to **2b**.  $R = NO_2$ ,  $X = SO_3H$ 

**3a**. R = Cl, X = H to **3b**. R = Cl, X = 
$$SO_3H$$

**4a**. R = 
$$t$$
-butyl, X = H to **4b**. R =  $t$ -butyl, X = H and SO<sub>3</sub>H (~1:1)<sup>a</sup>

**5a**. R = CH<sub>2</sub>CH<sub>2</sub>OH, X = H to **5b**. R = CH<sub>2</sub>CH<sub>2</sub>OH, X = 
$$SO_3H^b$$

**6a.** R = 
$$SO_3H$$
, X = H to **6b**. R =  $SO_3H$ , X = H

Fig. 1

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$$H_2N$$
 $H_2N$ 
 $H_2N$ 

Fig. 2

Scheme 2

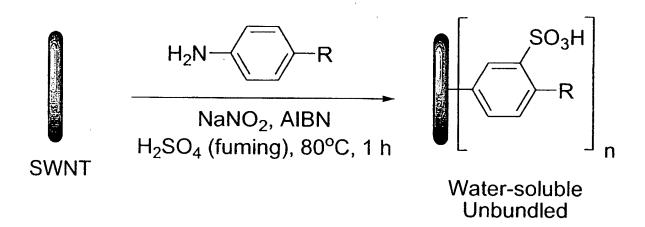


Fig. 3

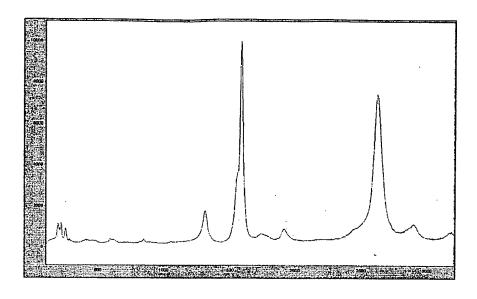


Fig. 4

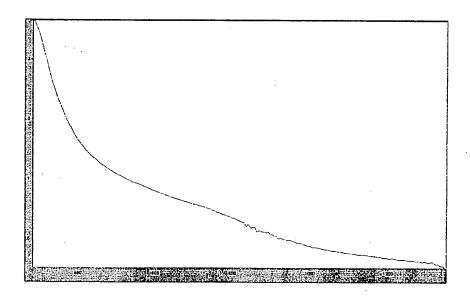


Fig. 5

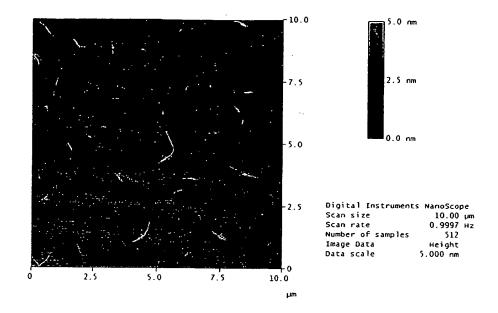


Fig. 6

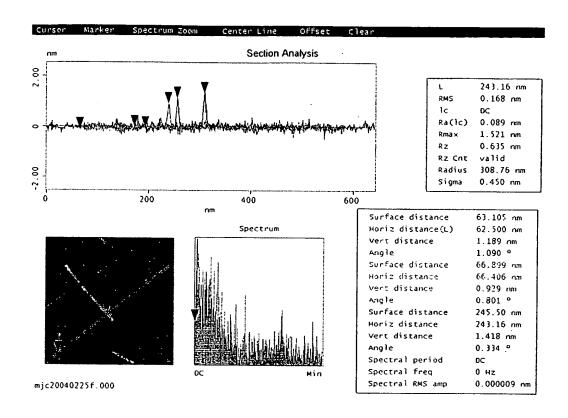


Fig. 7

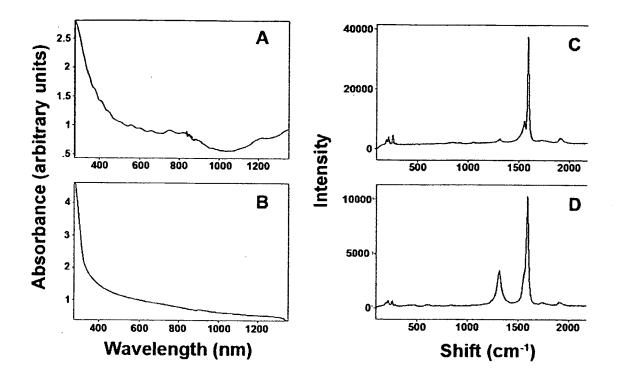


Fig. 8

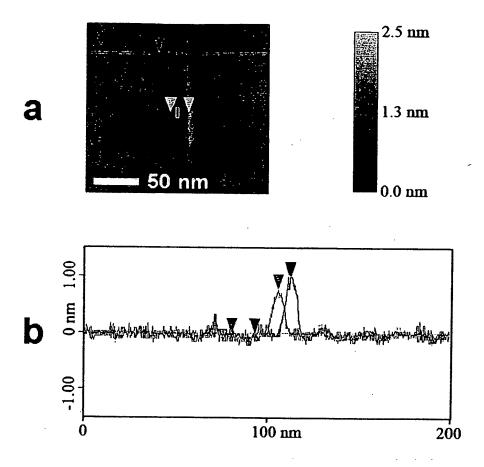


Fig. 9

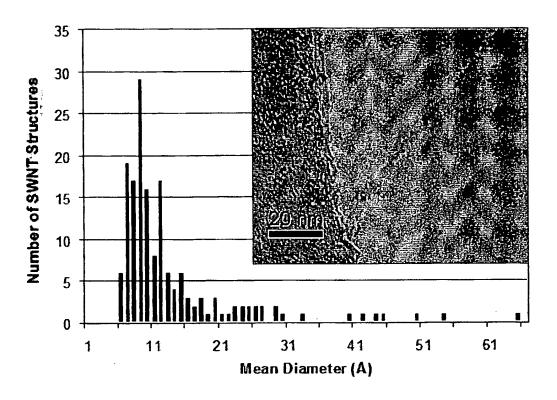


Fig. 10

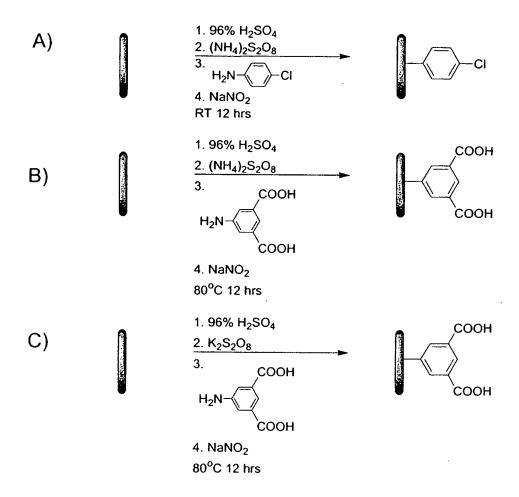


Fig. 11

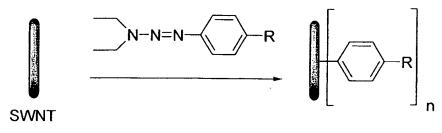
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## Scheme 3

H-B = Acidic Media

Fig. 12

## Scheme 4



R = Halogen, Alkyl, Ester, Amide, Ether

Fig. 13